We claim:

1. A process for producing rigid polyurethane foams by reacting

a) polyisocyanates with

b) compounds having at least two hydrogen atoms reactive toward isocyanate groups, in the presence of

c) catalysts, and

d) blowing agents,

which comprises the presence, among the compounds having at least two hydrogen atoms reactive toward isocyanate groups, of at least one graft polyol capable of preparation via in-situ polymerization of ethylenically unsaturated monomers in polyether alcohols.

2. A process as claimed in claim 1, wherein the amount used of the graft polyols is up to 100% by weight, based on component b.

3. A process as claimed in claim 1, wherein the amount used of the graft polyols is from 0.5 to 70% by weight, based in each case on component b.

4. A process as claimed in claim 1, wherein the amount used of the graft polyols during the production of rigid polyurethane foams for use in refrigeration equipment is from 3 to 70% by weight, based on component b.

5. A process as claimed in claim 1, wherein the amount used of the graft polyols during the production of rigid polyurethane foams for use in sandwich components is from 0.5 to 35% by weight, based on component b.

6. A process as claimed in claim 1, wherein the graft polyols have a hydroxy value in the range from 20 to 120 mg KOH/g.

7. A process as claimed in claim 1, wherein the graft polyol particle distribution has a maximum at from 0.1 to 8 μm.

8. A process as claimed in claim 1, wherein the graft polyols have bimodal particle size distribution with two clearly separated maxima for the polymers.

9. A process as claimed in claim 1, wherein the graft polyols are prepared by in-situ polymerization of ethylenically unsaturated monomers in polyether alcohols having a functionality of from 2 to 8 and having a hydroxy value in the range from 100 to 800 mg KOH/g, obtainable by an addition reaction of alkylene oxides onto H-functional starter substances, the starter substances having been selected from the group consisting of polyfunctional alcohols, sugar alcohols, aliphatic amines, and aromatic amines.

10. A process as claimed in claim 1 wherein the graft polyols can be prepared by in-situ polymerization of ethylenically unsaturated monomers in polyether alcohols which are obtained by an addition reaction of alkylene oxides onto tolylenediamine, using basic catalysis.

11. A process as claimed in claim 1, wherein the graft polyols can be prepared by in-situ polymerization of ethylenically unsaturated monomers in polyether alcohols which are obtained by an addition reaction of alkylene oxides onto trimethylolpropane, using basic catalysis or catalysis by multimetal cyanide complexes.

12. A rigid polyurethane foam capable of production as claimed in any of claims 1 to 10.

13. A graft polyol capable of preparation by in-situ polymerization of ethylenically unsaturated monomers in polyether alcohols having a hydroxy value in the range from 100 to 600 mg KOH/g, obtainable by an addition reaction of alkylene oxides onto H-functional starter substances, the starter substances having been selected from the group consisting of polyfunctional alcohols, sugar alcohols, aliphatic amines, and aromatic amines.

14. A graft polyol as claimed in claim 13, capable of preparation by in-situ polymerization of ethylenically unsaturated monomers in polyether alcohols having a hydroxy value in the range from 140 to 240 mg KOH/g, which are obtained by an addition reaction of alkylene oxides onto tolylenediamine.

15. A graft polyol as claimed in claim 13, capable of preparation by in-situ polymerization of ethylenically unsaturated monomers in polyether alcohols having a hydroxy value in the range from 140 to 240 mg KOH/g, which are obtained by an addition reaction of alkylene oxides onto trimethylolpropane.